

ON THE GENERA OF PHILANTHINE WASPS, WITH THE  
DESCRIPTION OF A NEW SPECIES FROM ARIZONA  
(Hymenoptera: Sphecidae)

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The Philanthine wasps are a small compact group of genera with representatives in all the major zoogeographic regions of the world save the Australian Realm<sup>1</sup>. Four genera occur in the New World: *Philanthus* Fabricius, *Trachypus* Klug, *Aphilanthops* Patton, and the Miocene fossil genus *Prophilanthus* Cockerell. All the extant Old World forms are referable to the nominate genus *Philanthus*<sup>1</sup>. For a fossil species discovered in the Oligocene beds on the Isle of Wight, England, Cockerell erected the genus *Philoponites*. In addition, Giner Marí has recently described *Philoponoïdes*<sup>2</sup> for a new species, *Philoponoïdes tricolor*, which he captured in 1939 in northern Rio de Oro. Giner states this genus is intermediate between *Philanthus* and *Philoponidea*, and since the latter is a Cercerine genus, *Philoponoïdes* may eventually prove to be referable to that tribe.

The following table will serve to differentiate the genera of Philanthine wasps.

KEY TO THE GENERA

- |  |                           |
|--|---------------------------|
| 1. Fossil forms .....  | 2                         |
| Extant forms .....   | 3                         |
| 2. Oligocene forms; (Isle of Wight, England)....   | <i>Philoponites</i> Ckl.  |
| Miocene forms; (Florissant, Colorado) .....  | <i>Prophilanthus</i> Ckl. |
| 3. Abdomen with first segment very slender, elongate and petiolate, two to three times as long as wide at apex and separated there by a distinct constriction from remainder of abdomen. Fore wing with marginal cell not appendiculate at apex. Eyes with inner orbits emarginate or distinctly angulate and more or less convergent toward vertex. (Neotropical, melittotherous forms) ..... | <i>Trachypus</i> Klug     |
| Abdomen with first segment broadly sessile with second segment, or if separated from second by a constriction then not appreciably longer than broad at apex. (Holarctic and Oriental forms) .....   | 4                         |

<sup>1</sup>Frederick Smith described a *Philanthus* (*Trachypus*) *notaulus* [1861, Journ. Proc. Linn. Soc., Zool., VI, p. 57] from Australia, but I believe this species is either referable to another genus, or perhaps had an incorrect locality label.

<sup>2</sup>Eos, XX, pp. 372-375, (1945).

4. Eyes with inner orbits entire, straight or convex, and parallel, never strongly convergent toward vertex. Fore wing with marginal cell distinctly appendiculate at apex. (Nearctic, myrmecotherous forms) ..... *Aphilanthops* Patton

Subgenera of *Aphilanthops*:

- a. Postscutellum with a large, distinct, backward projecting laminate flange which more or less overhangs an excavation in the upper anteriolateral corner of propodeum. Females with both pygidium and hypopygium large, subquadrate, and concave ..... *Clypeadon* Patton
- aa. Postscutellum with lateral flange absent or very poorly developed and anteriolateral corner of propodeum without a marked depression. Females with pygidium and hypopygium simple, normal, trigonal, flat, not so modified.....  
..... *Aphilanthops* sensu stricto

Eyes with inner orbits distinctly angulate medially and generally convergent toward vertex. Fore wing with marginal cell not appendiculate at apex. (Holarctic and Oriental, melittotherous forms) ..... *Philanthus* Fabricius

*Philoponites* Cockerell, 1916, contains only one species: *Philoponites clarus* which Cockerell described from the Oligocene beds at Gurnet Bay, Isle of Wight, England.

*Prophilanthus* Cockerell, 1906, is likewise a monotypic fossil group. Its sole species, *Prophilanthus destructus* Cockerell, was discovered in the Miocene shales at Florissant, Colorado.

*Philanthus* Fabricius, 1790 (of which *Simblephilus* Panzer, 1801, *Symblephilus* Panzer, 1806, *Cheilopogonus* Westwood, 1834, *Anthophilus* Dahlbom, 1844, *Chilopogon* Kohl, 1897, *Epiphilanthus* Ashmead, 1899, *Pseudanthophilus* Ashmead, 1899, *Oclocletes* Banks, 1913, and *Ococletes* Mickel, 1918, are synonyms) is the largest and most widely distributed genus in the tribe. The genus is best developed in the Holarctic Region, but there are a considerable number of species known from the Ethiopian Region. The Oriental *Philanthus* fauna is apparently an attenuation of that in the Palaearctic Region, for thirteen species have been described from India, one from Assam, and three from Tenasserim. Van der Vecht reports only one species from Java<sup>3</sup>, and the genus has probably reached the limits of its distribution here in Sundaland. The genus is apparently wholly absent from the Australian Realm. In North America, *Philanthus* is represented by thirty-one species and subspecies,

<sup>3</sup>Ent. Med. Ned-Indië, V, p. 84, (1939).

according to Strandtmann who has recently presented a review of the genus<sup>4</sup>. The species of *Philanthus* are terricolous fossorial forms which provision their nests with various genera of bees such as *Andrena*, *Halictus*, and *Calliopsis*; some species prey more or less exclusively upon the honey bee, *Apis mellifera*. Hamm and Richards<sup>5</sup>, and Berland<sup>6</sup> have given digests of the biology of the European species; and the Peckhams<sup>7</sup>, the Raus<sup>8</sup>, and Reinhard<sup>9</sup> have presented entertaining accounts of the North American forms.

*Trachypus* Klug, 1810 (of which *Simblephilus* Dahlbom, 1844 and *Philanthocephalus* Cameron, 1890 are synonyms) is confined to the Neotropical Region and is the only generic representative of the Philanthine wasps in that region. Various Old World species have at one or another time been referred to *Trachypus* but such forms have always eventually proved to be merely species of *Philanthus*. Like *Philanthus*, the species of *Trachypus* nest in the ground and provision their burrows with bees.<sup>10</sup>

*Aphilanthops* Patton is a small endemic North American genus, peculiar and confined to the Nearctic Region. On the basis of structure, particularly that of the females, two distinct groups are easily recognizable: these may be accorded subgeneric status and are differentiated in the foregoing key on a preceding page. The species of *Aphilanthops* are fossorial myrmecotherous forms; one species, *A. frigida* (Smith), apparently restricts its attention largely if not wholly to queen ants.<sup>11</sup> Only one species, *Aphilanthops (Aphilanthops) frigida* (Smith), occurs in the eastern United States. The remaining ten forms recognized by Dunning in his monograph of the genus<sup>12</sup> are confined largely to western North America. To these may now be added the following distinctive Arizona species.

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<sup>4</sup>Ohio State Univ., Abstr. Doct. Dis., no. 46, p. 51, (1945).

<sup>5</sup>Trans. Ent. Soc. London, 1930, pp. 95-131.

<sup>6</sup>Faune de France, X, pp. 44-47, (1925).

<sup>7</sup>Wisconsin Geol. & Nat. Hist. Surv., Bull. no. 2, (Sci. Ser. 1), pp. 117-124, (1898). V. et.: Wasps, Social and Solitary, pp. 154-167, (1905).

<sup>8</sup>Wasp Studies Afield, pp. 109-117, (1918).

<sup>9</sup>Ann. Rept. Smithson. Inst., 1922, pp. 363-376. V. et.: The Witchery of Wasps, pp. 92-140, (1929).

<sup>10</sup>Cf.: Janvier, Ann. Sci. Nat., Zool., (10), XI, pp. 144-151, (1928).

<sup>11</sup>Cf. Wheeler; Journ. Animal Behavior, III, pp. 374-387, (1913); or Foibles of Insects and Men, pp. 71-82, (1928).

<sup>12</sup>Trans. Amer. Ent. Soc., XXV, pp. 19-26, (1898).

*Aphilanthops* (*Clypeadon*) *phoenix* Pate, new species

This large and handsome Arizona species is readily distinguished from all other forms of *Clypeadon* by its bituberculate clypeus, polite ocellar and post-ocellar calli, and striking livery.

*Type*.—♀; PHOENIX, MARICOPA COUNTY, ARIZONA. Elevation, 1100 feet. July 7. [Academy of Natural Sciences of Philadelphia, Type no. 10600.]

*Female*. Length 13 mm. Black; the following citrinous: a small spot at base of mandibles; clypeus laterally on each side with a spot; scapes except base and apex; pronotum dorsally, pronotal tubercles; tegulae and axillary sclerites; axillae; anterior half of scutellum; postscutellum; a small spot dorsolaterally on each side of propodeum; abdomen with a large ovate spot laterally on each side; all tibiae with a longitudinal stripe on outer broad fasciae almost covering them except second which is narrowly interrupted medially; third sternite with a small spot laterally on each side of first tergite, the second to fifth tergites with faces. Castaneous: mandibles except piceous apices; clypeal flange; base and apex of scape, pedicel and first flagellar article; last abdominal segment and all sternites.

Head broader than high in anterior aspect. Front and clypeus with a moderately heavy vestiture of rather long appressed silvery hair; vertex more sparsely clad; temples with a thin clothing of long shaggy, silvery hair. Front with moderate, distinct, rather close punctures; rather strongly tumid between and above antennal sockets: interantennal line almost three-fourths (0.73) the antennocular distance; front very broad, the upper interocular distance almost one and a half (1.485) times the vertical eye length, the lower interocular distance almost one and seven-tenths (1.693) the vertical eye length. Vertex punctate like front; ocelli in a subequilateral triangle, the postocellar line three-fifths the ocellocular distance, posterior ocelli with a large, crescentic, glabrous, impunctate, polite callus along their inner margins; medio-posteriorly with a large, lenticular, glabrous, impunctate, polite callus; posteriolateral angles of head tumid, and more sparsely punctate than remainder of vertex and temples which are moderately finely punctate. Antennae with scapes short, obterete, one-third the vertical eye length; pedicel subglobose, one-third the length of scape and one-fourth the length of first flagellar article; flagellum not clavate but tapering somewhat toward apex, the first segment elongate, twice the length of second segment which is equal in length to the third and following segments, penult segment five-sixths the length of last article which is equal in length to the second segment. Clypeus flat, punctate like front, with a broad and very shallow vertical furrow between the median and lateral lobes, disc of median lobe with a

pair of large acute tubercles medially, the apical margin flanged, entire, edentate.

Thorax and propodeum with a moderate vestiture of decumbent silvery hair. Mesonotum with rather coarse and close puncturation; axillae impunctate; scutellum flat, impunctate discally, bisected by a fine impressed line; postscutellum tumid, almost impunctate. Mesopleura coarsely punctate, closely and rugosely so on prepectus, dorsally and posteriorly, but with punctures separated below; metapleura subnitidous. Propodeum rather closely, rugosely punctate throughout; trigonal area of dorsal face bisected on posterior half by a shallow, transversely striate groove, ending in a polite, impunctate prominence posteriorly.

Middle and hind legs with tibiae and tarsi strongly spinose.

Abdomen with a moderate vestiture of decumbent silvery hair; weakly constricted between first and second tergites. Tergites and sternites with separated rather coarse punctures. Pygidium subquadrate, strongly concave; the disc subfulgid and subgranulate; apical margin bisinuate; the lateral margins with a small, acute subapical tooth. Hypopygium elongate subrectangular, strongly concave; the disc polite, impunctate; lateral edges strongly raised and thickened; apical margin subquadrately excised medially.

This distinctive southwestern species is known only from the unique female described above.

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